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Abstract of the disclosure

A signal current corresponding to an incident light intensity is output from a photodiode PD, the signal current is converted into a signal voltage by an integration circuit 10, and the amount of a change in signal voltage in a predetermined time is output from a CDS circuit 20. The difference between two voltage values output from the CDS circuit 20 is obtained by a difference arithmetic circuit 30 and held by a S-H circuit 40. In addition, the maximum value of voltage values obtained by the difference arithmetic circuits 30 of respective units 100<sub>n</sub> is obtained by comparison circuits 50 of the respective units 100<sub>n</sub>, a reference signal voltage generation circuit 500, a final coincidence determination circuit 200, and a reference voltage hold circuit 300, and on the basis of the maximum value, the A/D conversion range of an A/D conversion circuit 400 is set.